

**Timestamp:** 7/18/2016 14:58:53

**Title of Proposed Observation:**

Dark Filament and Photospheric Magnetic Field with coordinated observations between Hida Obs, Fuxian Solar Obs and Hinode

**Main Objective:**

Dark filaments on the disk and Photospheric magnetic field

**Scientific Justification:**

The main purpose of this plan is to investigate the evolution of fine structures of filaments and their relation with velocity field and magnetic field.  
If we are lucky enough, we could observe the magnetic reconnection and eruption.

FSO group is used to study filaments by high resolution observations combined with simulations (e.g. NLFFF). But in this process, we need very good measurement of photospheric magnetic field.

Therefore, 1m NVST at FSO does high resolution H-alpha imaging and 60cm DST at Hida Obs performs spectroscopy at chromospheric lines to measure the velocity, density and temperature of filaments.  
Hinode is hoped to obtain the distribution and evolution of photospheric magnetic field with high accuracy.

When the filament looks stationary,  
Hida/DST will occasionally take spectro-polarimetric data too in He 1083nm in order to directly confirm magnetic field configuration in the filament.

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**Dates:**

<<Start and end dates>>

09-Aug-2016 (Tue) to 20-Aug-2016 (Sat)

<<Minimum number of observation days>>

6 days in total

<<Continuity of observations>>

We desire continuous observations for a few hours in everyday (see next section).

**Time window:**

<<Minimum duration>>

Desirable duration is about 4 hours per one day

(00:00 to 04:00 UT).

Minimum duration is 2 hours.

The best time-period: 00:30 to 02:30 UT (AM in Japanese and Chinese time)

<<Allowability of short interruptions>>

It is preferable that there are no interruptions except for moments for changing targets.

**Target(s) of interest:**

Main targets will be dark filaments on the disk.

If there are active regions on the disk, we would like to observe active-region filaments.

If not, we would like to select quiescent filaments.

**SOT Requests:**

SP (fast map) 164"x164" (30min) twice/hr

**EIS Requests:**

SK\_AR1\_50x320c: 50x320" /180sec, exp=5sec

or

TR\_BRIGHT\_LO: 20x144" /300sec, exp=30sec

**XRT Requests:**

Monitor around the target with high time-cadence with "Dynamics" mode and AI-mesh filter.

(ex.) 512"x512", cadence 30sec, 75Mb/hr(?)

**IRIS Requests:**

3620258076 | Large dense 320-step raster 105.3x120 320s Deep x 8 FUV  
spectrally | 2993.20 | 3785.93 | 0.9 | 9.4+/-0.1 | 2993+/-0 |  
37.4+/-0.0 | 37.4+/-0.0 | 37.4+/-0.0 | 37.4+/-

**Additional instrument coordination:**

Hida/DST, FSO/NVST

**Previous HOP information:**

HOP0012: Cooperative Observations between Hida Observatory & Hinode  
Satellite - 1. Emerging Flux Regions 2. Cool Jets 3. Ellerman Bombs

HOP0075: Coordinated Observations between Hida Observatory & Hinode  
Satellite

HOP0128: Coordinated Observations between Hida Observatory & Hinode  
Satellite

HOP0275: Chromospheric dynamics in active region with a coordinated  
observation between Hida, Hinode and IRIS

HOP0291: Chromospheric jets around active regions with a coordinated  
observation between Hida Obs, Fuxian Solar Obs and Hinode

[http://solarb.msfc.nasa.gov/operations/hop\\_assessment/Proposers/HOP\\_Proposer\\_Ichimoto.html](http://solarb.msfc.nasa.gov/operations/hop_assessment/Proposers/HOP_Proposer_Ichimoto.html)

[http://solarb.msfc.nasa.gov/operations/hop\\_assessment/Proposers/HOP\\_Proposer\\_Ueno.html](http://solarb.msfc.nasa.gov/operations/hop_assessment/Proposers/HOP_Proposer_Ueno.html)

**Additional Remarks:**

Appendix 1 : Observations with DST at Hida Obs.

\* H-alpha 9 wavelength filtergraph:

Wavelength: -0.8, -0.6, -0.4, -0.2, 0.0, +0.2, +0.4, +0.6, +0.8 A

Time cadence: 15 sec

\* Multi-line (CaII K, H-alpha) spectro-heliograph:

Scan width: about 150 arcsec

Time cadence: about 15 sec

\* Spectro-polarimetry at He I 1083nm:

Scan width: about 100 arcsec

Time cadence: about 30 min

Appendix 2 : Observations with 1m telescope (NVST) at FSO

\* High resolution H-alpha filtergraph:

Wavelength: +0.6, 0.0, -0.6 A

Time cadence: 18 sec

\* High resolution TiO image:

Wavelength: 7058 A  
Time cadence: 12 sec